

What Is Claimed:

B. July 1

1. A feeder chute comprising:
a bottom member having a first end which defines a receiving zone and a second end which defines a discharge zone;
a plurality of channels formed in the bottom member within the discharge zone and extending in the direction between the first and second ends, wherein one of the plurality of channels has a terminus defining a first discharge plane and a second channel adjacent to the one channel has a terminus defining a second discharge plane, the second discharge plane being spaced apart from the first discharge plane.

2. The feeder chute according to claim 2, wherein the bottom member includes a portion between the first and second ends which defines an alignment zone, the feeder chute further comprising:
means for aligning an object traveling through the alignment zone, the means for aligning causing the object to be aligned with its length axis extending substantially in a direction between the first and second ends of the bottom member.

3. The feeder chute according to claim 2, wherein the means for aligning comprise:
a plurality of spaced projections extending upwardly from the bottom member within the alignment zone.

4. The feeder chute according to claim 3, wherein the plurality of projections comprise:
at least one linear array of spaced projections extending upwardly from the bottom member to define two or more passages each of which is co-extensive with a single channel of the plurality of channels.

5. The feeder chute according to claim 4, wherein the plurality of projections further comprise:

at least one projection extending upwardly from the bottom member, the at least one projection being spaced apart from the linear array of projections and within one of the two or more passages defined by the linear array of projections.

6. The feeder chute according to claim 4, wherein the projections are individually or collectively removable.

7. The feeder chute according to claim 3, wherein each of the plurality of spaced projections is substantially cylindrical.

8. The feeder chute according to claim 1, wherein each of the plurality of channels further comprises a slot extending at least partially the length of each channel.

9. The feeder chute according to claim 8, wherein the slot of each channel extends to a position which is about 10 centimeters from the discharge plane thereof.

10. The feeder chute according to claim 1, wherein the distance between the discharge plane of adjacent channels is substantially the same as the distance between troughs of adjacent channels.

11. A feeder chute and a conveyor system in combination,
the feeder chute comprising:

a bottom member having a first end which defines a receiving
zone and a second end which defines a discharge zone, and

a plurality of channels formed in said bottom member within
the discharge zone and extending in the direction between the first and second
ends; and

the conveyor system comprising:

a plurality of conveyors, each conveyor being aligned beneath
one of the plurality of channels of the feeder chute, and each conveyor
including a drive wheel operatively coupled to a drive shaft, one or more
driven wheels, and a conveyor belt suspended on the drive wheel and the one
or more driven wheels, and

drive means, coupled to the drive shaft of each conveyor, for
driving revolution of each of the plurality of conveyors;

wherein one of said conveyors forms a terminus defining a first discharge plane and a
second conveyor adjacent to said one conveyor forms a terminus defining a second
discharge plane, the second discharge plane being spaced from said first discharge
plane.

12. The feeder chute and conveyor system according to claim 11,
wherein the drive means comprises and a motor operatively coupled to the drive shaft.

13. The feeder chute and conveyor system according to claim 11,
wherein drive shaft for each conveyor is a common drive shaft and the drive means is
coupled to the common drive shaft.

14. The feeder chute and conveyor system according to claim 11,
wherein the conveyor belts for the plurality of conveyors all rotate at a constant linear
velocity.

~~substantially the same as the distance between troughs of adjacent channels.~~

means, in communication with a source of objects, for delivering an object into an image capture zone whereby the object passes through a predetermined point in space within the image capture zone;

a second image capture device located a first predetermined distance from the predetermined point in space, the second image capture device being substantially 90 degrees offset from the first image capture device.

a bottom member having a first end which defines a receiving zone and a second end which defines a discharge zone;

a plurality of channels formed in the bottom member within the discharge zone and extending in the direction between the first and second ends, wherein one of the plurality of channels has a terminus defining a first discharge plane and a second channel adjacent to the one channel has a terminus defining a second discharge plane, the second discharge plane being spaced apart from the first discharge plane.

1. The first step is to identify the problem. This involves understanding the current situation and the goals that need to be achieved.

18. The system according to claim 16, wherein said means for delivering comprises a feeder chute in combination with a conveyor system, the feeder chute comprising:

a bottom member having a first end which defines a receiving zone and a second end which defines a discharge zone, and

a plurality of channels formed in said bottom member within the discharge zone and extending in the direction between the first and second ends; and

the conveyor system comprising:

a plurality of conveyors, each conveyor being aligned beneath one of the plurality of channels of the feeder chute, and each conveyor including a drive wheel operatively coupled to a drive shaft, one or more driven wheels, and a conveyor belt suspended on the drive wheel and the one or more driven wheels, and

drive means, coupled to the drive shaft of each conveyor, for driving revolution of each of the plurality of conveyors;

wherein one of said conveyors forms a terminus defining a first discharge plane and a second conveyor adjacent to said one conveyor forms a terminus defining a second discharge plane, the second discharge plane being spaced from said first discharge plane.

19. The system according to claim 16 further comprising:
one or more light sources which illuminate the image capture zone.

20. The system according to claim 19, wherein the one or more light sources are selected from the group consisting of a strobe light, a strobed LED, a continuous fluorescence high frequency light, and combinations thereof.

21. The system according to claim 16 further comprising:
a processor in communication with said first and second image capture devices.

22. A system for capturing multiple images of an object, the system comprising:

means, in communication with a source of objects, for delivering an object into an image capture zone whereby the object passes through a predetermined point in space within the image capture zone;

an image capture device located a predetermined distance from the predetermined point in space; and

a mirror positioned within the image capture zone to reflect a reflected image of the object which is substantially 90 degrees offset from a direct image presented to the image capture device;

wherein the image capture device captures both the direct image and the reflected image simultaneously.

23. The system according to claim 22, wherein said means for delivering comprises a feeder chute comprising:

a bottom member having a first end which defines a receiving zone and a second end which defines a discharge zone;

a plurality of channels formed in the bottom member within the discharge zone and extending in the direction between the first and second ends, wherein one of the plurality of channels has a terminus defining a first discharge plane and a second channel adjacent to the one channel has a terminus defining a second discharge plane, the second discharge plane being spaced apart from the first discharge plane.

24. The system according to claim 22, wherein said means for delivering comprises a feeder chute in combination with a conveyor system, the feeder chute comprising:

a bottom member having a first end which defines a receiving zone and a second end which defines a discharge zone, and

a plurality of channels formed in said bottom member within the discharge zone and extending in the direction between the first and second ends; and

the conveyor system comprising:

a plurality of conveyors, each conveyor being aligned beneath one of the plurality of channels of the feeder chute, and each conveyor including a drive wheel operatively coupled to a drive shaft, one or more driven wheels, and a conveyor belt suspended on the drive wheel and the one or more driven wheels, and

drive means, coupled to the drive shaft of each conveyor, for driving revolution of each of the plurality of conveyors;

wherein one of said conveyors forms a terminus defining a first discharge plane and a second conveyor adjacent to said one conveyor forms a terminus defining a second discharge plane, the second discharge plane being spaced from said first discharge plane.

25. The system according to claim 22 further comprising:
one or more light sources which illuminate the image capture zone.

26. The system according to claim 25, wherein the one or more light sources are selected from the group consisting of a strobe light, a strobed LED, a continuous fluorescence high frequency light, and combinations thereof.

~~27. The system according to claim 22 further comprising:
a processor in communication with said image capture device.~~

28. A method of simultaneously preparing a three-dimensional image of a plurality of objects comprising:

providing a plurality of substantially parallel flows of objects laterally spaced along a first axis;

delivering objects from each of the plurality of parallel flows into an image capture zone, whereby the delivering for each flow, relative to each other flow, is spaced apart along a second axis perpendicular to the first axis;

capturing first and second images of each of a plurality of objects passing through the image capture zone, the first and second images being about 90 degrees offset relative to one another.

29. The method according to claim 28, wherein said providing a plurality of laterally spaced, substantially parallel flows comprises:

providing a flow of objects and
dispersing the flow into the plurality of substantially parallel flows

30. The method according to claim 28, wherein said capturing first and second images is carried out simultaneously.

31. The method according to claim 28, wherein each of the plurality of substantially parallel flows passes through a predetermined point within the image capture zone and each predetermined point is assigned a predetermined magnification factor, the method further comprising:

adjusting the size of the first and second images for each of the plurality of objects by multiplying the size thereof by the predetermined magnification factor.